

REMARKS

Reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 1-24 were pending. By the present response, claims 25-30 have been added. Thus, upon entry of the present response, claims 1-30 remain pending and await further consideration on the merits.

Support for the claim amendments can be found, for example, in at least the following portions of the specification: the original claims, the original figures, for example, Figure 7c, 8c and 9, and the specification, page 18, lines 34-35. However, the claimed invention is not limited to the preferred disclosed embodiments.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

In the Official Action, at paragraph 2, claims 1-14 and 16-24 were rejected under 35 U.S.C. §103(a) as reciting subject matter which is allegedly obvious, and therefore allegedly unpatentable, over U.S. Patent No. 4,426,820, issued to Terbrack et al. (hereafter "*Terbrack et al.*"), in view of GB 2,256,023 issued to Baker (hereafter "*Baker*"), and in view of U.S. Patent No. 3,347,048 issued to Brown et al. (hereafter "*Brown et al.*"). Applicant respectfully requests reconsideration of these rejections.

With respect to at least the following elements of claim 1, the only independent claim at issue here, the combination of references does not teach or suggest the claimed invention.

- a. *"said tongue is anglable into the groove"*

For this element, the Examiner appears to rely on Figure 10 of *Terbrack et al.* However, *Terbrack et al.* states that the key 27 fits tightly in the groove 26. Column 4, lines 65-66. Accordingly, Figure 10 of *Terbrack et al.* cannot teach or suggest that the tongue is anglable into the groove.

- b. *"the locking element is insertable into the locking groove by mutual angular motion"*

For this element, the Examiner appears to rely on clamp 29 fitting into groove 28 of Figure 10 of *Terbrack et al.* However, the clamp 29 is pressed perpendicularly into the grooves 28. There is no teaching or suggestion that the clamp 29 is insertable into the grooves 28 by mutual angular motion.

- c. *"a space which extends horizontally from the inner vertical plane and at least halfway to the outer vertical plane below the tongue"*

For this element, the Examiner relies on Figure 4 of *Baker*. However, "the inner vertical plane" is defined as the inner end of the upper abutment surfaces. The "outer vertical plane" is defined as the outer edge of the upper abutment surfaces. See the inner vertical plane (IVP) and the outer vertical plane (OVP) in the attached copy of Figure 4 of *Baker*. As is clear from Figure 4, there is no space extending from the inner vertical plane toward the outer vertical plane.

The Examiner also appears to rely on the space 38 of *Brown et al.* However, space 38 is clearly not between the inner vertical plane (IVP) and the outer vertical plane (OVP) as defined in claim 1.

d. *"at least a portion of the lower abutment surfaces are positioned outside the outer vertical plane"*

For this element, the Examiner relies on Figure 18 of *Terbrack et al.* However, Figure 18 of *Terbrack et al.* is a completely different embodiment than Figure 10, upon which the Examiner relies for the other portions of the claim. The Examiner has not indicated how Figures 10 and 18 are to be combined, and if so, what is the motivation for combining. Accordingly, that portion of the rejection is both improper and unusual.

With regard to the Examiner's reliance on Figure 18, note that claim 1 requires that the lower abutment surfaces be not only in a plane parallel to the principle plane of the floorboard, but also that such surfaces form a part of the tongue and groove. In Figure 18 of *Terbrack et al.*, the only lower abutment surface that is parallel to the principle plane of the floorboard is not part of the tongue and groove, but precedes the groove.

The Examiner has ascribed the inner vertical plane as indicated by 57 of Figure 18 and the outer vertical plane as the intersection of 58 and 54 in Figure 18. However, claim 1 clearly states that "the cooperating upper abutment surfaces are limited horizontally inwards from the joint edge and horizontally outwards to the joint edge by an inner vertical plane and an outer vertical plane, respectively." Thus, the correct inner vertical plane of

Figure 18 is the vertical extent of recess 56 and the correct outer vertical plane of Figure 18 is indicated by 57

Furthermore, one of ordinary skill in the art would not have been motivated to combine the referenced disclosures in the manner proposed because the proposed modification renders one or the other cited references unsatisfactory for its intended purpose. Thus, the combination of *Terbrack et al.*, *Brown et al.* and *Baker* is improper as a basis for the obviousness rejection.

For example, *Terbrack et al.* discloses that the groove and tongue joint forms a connection with adjacent panels "preventing displacement." See, for example, column 1, lines 42-44 and lines 57-58. With respect to FIG. 10 relied upon by the Examiner in the Official Action, *Terbrack et al.* discloses a panel that has "a groove 26 in one panel and a key 27 in the other panel, which elements are dimensioned so as to fit into each other with tight fit." See column 4, lines 64-66.

In contrast, *Brown et al.* discloses revetment blocks that are "loosely joined and have recesses between adjacent blocks." See, for example, column 1, lines 12-13. *Brown et al.* further discloses that the blocks are "joined together by a loose tongue and groove joint so designed that the blocks may tilt slightly with respect to each other." See column 1, lines 44-46.

Brown et al. distinguishes his revetment block noting the role that the loose joint plays in the functioning of the revetment block. For example, *Brown et al.* discloses that "hydrostatic pressure is immediately relieved; first, because the loose joint permits upward lifting movement of the blocks." See column 3, lines 49-52. Thus, if the "tight fit" joint

that "prevents displacement" disclosed in *Terbrack et al.* were to be combined in the revetment block of *Brown et al.*, then the revetment block would no longer relieve the hydrostatic pressure and would not function as intended.

Likewise, *Terbrack et al.* discloses that the panel is of a type that "a perfectly planar sports ground surface is obtained" (column 1, line 28) and that "relative displacement can not occur" (column 2, lines 14-15) between the assembled panels. Thus, if the joint of *Brown et al.* with the disclosed loose joining and slight tilt between adjacent blocks were to be combined in the panel of *Terbrack et al.*, then the panel would no longer provide a "perfectly planar surface" nor would relative displacement "be prevented."

The combination of *Terbrack et al.* and *Baker* is also improper. *Baker* describes the functioning of the joint as addressing the swelling of tongue and groove joints. For example, the panel of *Baker* restricts separation of the joint but also provides a pre-determined spacing between the side edges in the assembled joint (page 2, lines 5-10). *Baker* also notes that the opposed side edges 17a, 17b of recess 9 engage rib 10 and limit the relative spacing of the adjoining side edges and allows for expansion of the panels as may be caused by exposure to moisture (page 6, line 6 *et seq.*). Thus, *Baker* purposefully allows for relative displacement of the tongue 5 within the limits of the movement of rib 10 within opposed side edges 17a and 17b. If the "tight fit" joint that "prevents displacement" disclosed in *Terbrack et al.* were to be combined in the panel of *Baker*, then the panel would no longer accommodate the expansion of the panels and would not function as intended.

Similarly to the modification of *Terbrack et al.* by *Brown et al.* discussed above, if the joint of *Baker* having the disclosed rib 10 and opposed edges 17a, 17b to accommodate relative motion due to expansion were to be combined with the panel of *Terbrack et al.*, then the panel of *Terbrack et al.* would no longer provide a "perfectly planar surface" nor would relative displacement "be prevented."

The MPEP notes that a combination of references resulting in a prior art reference being unsatisfactory for its intended purpose is improper. See, MPEP §2143.01. Here, the combinations proposed by the Examiner would result in the panel of *Terbrack et al.* from operating as designed and/or the revetment block of *Brown et al.* from functioning as designed and/or the panel of *Baker* from operating as designed. Since the proposed modification or combination of the prior art would change the principle of operation of prior art being modified, the teachings of the reference are insufficient to render the claims *prima facie* obvious. See, MPEP §2143.01. Accordingly, Applicant respectfully requests the withdrawal of this rejection.

The rejection based on a hypothetical combination of the disclosures contained in *Terbrack et al.*, *Brown et al.* and *Baker* is also improper because the Official Action has not established any motivation that would have directed one to modify the panel described in *Terbrack et al.* in the manner set forth in the Official Action. Indeed, no basis exists for modifying the panel disclosed in *Terbrack et al.* in light of the disclosures in *Brown et al.* and *Baker* in the manner contemplated in the Official Action.

The FIG. 10 illustration of a panel in *Terbrack et al.* relied upon in the Official Action discloses a groove 26 and a key 27, which are "dimensioned to fit into each other

with a tight fit." Column 4, lines 65-66. The Official Action relies upon *Brown et al.* for its alleged disclosure of a space below the tongue that extends horizontally from the inner vertical plane to the outer vertical plane.

A person considering the disclosures contained in *Terbrack et al.* and *Brown et al.* would not have been directed to modify the construction of the panel disclosed in *Terbrack et al.* in light of the revetment block disclosed in *Brown et al.* as the panel and revetment block are joined fundamentally different.

The FIG. 10 panel shown in *Terbrack et al.* contains a groove 26 and a key 27 "dimensioned to fit into each other with a tight fit." Column 4, lines 65-66. Thus, the groove 26 and the key 27 are complementally shaped to fit one into the other. The tongue 22 and the groove 24 disclosed in *Brown et al.* are quite different in that they are loosely interlocked with a space 47 that permits tilting relative to another block (column 2, lines 45-46) and permits both transverse and longitudinal movement of the joint (column 2, lines 56-59). Considering that the panel disclosed in *Terbrack et al.* is designed to be perfectly planar and to prevent displacement, there would be no need to include the noted features from the revetment block disclosed in *Brown et al.* as they would be unnecessary, and indeed contrary, to the intended operation of the panel described in *Terbrack et al.* One would not have been motivated to apply a joint having space 47 between the tongue 22 and the groove 24 as disclosed by *Brown et al.* to a panel joined by a groove 26 and a key 27 "dimensioned to fit into each other with a tight fit" as disclosed in *Terbrack et al.* Indeed, the loose fitting tongue and groove of *Brown et al.* acts inapposite to the tight fitting tongue

and groove of *Terbrack et al.* in that the loose fitting tongue and groove would not produce a tight fit and would not produce a perfectly planar surface.

Accordingly, the proposed modification is improper as no motivation exists for modifying the panel described in *Terbrack et al.* in light of the disclosures contained in *Brown et al.* and *Baker*. Accordingly, withdrawal of the rejection is respectfully requested. the rejection should be withdrawn.

Further as set forth above, even if one were to modify the references in the manner proposed, the claim 1 locking system would not have resulted. Indeed, the references cited by the Examiner are quite different from the claim 1 locking system.

In light of the above-noted deficiencies in the cited references, the proposed combination of *Terbrack et al.*, *Brown et al.* and *Baker* does not make claim 1 obvious and the rejection should be withdrawn.

The remaining claims depend from claim 1 and are distinguishable over the cited references for at least the reasons set forth above. Thus, the withdrawal of the rejection of claims 2-14 and 16-24 is respectfully requested.

In the Official Action, at paragraph 3, claim 15 was rejected under 35 U.S.C. §103(a) as reciting subject matter which is allegedly obvious, and therefore allegedly unpatentable, over *Terbrack et al.* in view of *Brown et al.* and *Baker*, and further in view of Applicant's Figure 1c. Applicant respectfully requests reconsideration of these rejections.

Claim 15 depends from claim 1, and thus contains each and every limitation of that independent claim. Nothing in Applicant's Figure 1c contributes to overcoming the above

noted deficiencies in *Terbrack et al.*, *Brown et al.* and *Baker*, whether these references are considered alone or in combination. Thus, claim 15 is distinguishable over the asserted combination of references for at least the same reasons as presented with respect to the rejection of claim 1. Accordingly, the rejection of claim 15 should be withdrawn.

NEW CLAIMS

New claims 25-30 define further distinguishing features of Applicant's claimed locking system for mechanical joining of floorboards.

For example, claim 25 recites that the cooperating upper abutment surfaces are at least partially displaced from the cooperating lower abutment surfaces in a displacing direction parallel to the principle plane of the floorboards. Claim 26 recites that at least a portion of the lower cooperating abutment surface is horizontally inward from the a vertical joint plane defined by a contacting portion of two juxtaposed upper portions of the floorboards, a first juxtaposed upper portion on a first one of the floorboards and a second juxtaposed upper portion on a second one of the floorboards. Claim 27 recites at least a portion of the lower cooperating abutment surface is between the outer vertical plane and a vertical joint plane defined by a contacting portion of two juxtaposed upper portions of the floorboards, a first juxtaposed upper portion on a first one of the floorboards and a second juxtaposed upper portion on a second one of the floorboards.

Claims 25-27 depend from claim 1 and are distinguishable over the cited references for at least the reasons set forth above. Further, none of the cited references, either alone or in combination, disclose, teach or suggest the recited features of claims 25-27.

Further independent claim 28 and dependent claims distinguish over the cited references and are allowable. For example, claim 28 recites a locking system for mechanical joining of floorboards comprises, *inter alia*, a tongue-and-groove joint, a locking groove formed in an underside of a first one of the floorboards and extended in parallel therewith and spaced from the joint edge, and a portion projecting from a second one of the floorboards, the portion supporting, at a distance from the joint edge, a locking element cooperating with the locking groove. Both the tongue is anglable into the groove and the locking element is insertable into the locking groove by mutual angular motion of the floorboards about upper portions of the joint edges. In a joined state the cooperating upper abutment surfaces are in contact with each other and the cooperating upper abutment surfaces extend in a contacting state beginning at a first position in the groove at an inner vertical plane and ending at a second position in the groove at an outer vertical plane, wherein the outer vertical plane is closer to the joint edge than the inner vertical plane, and the tongue-and-groove joint includes a space in the groove between the inner vertical plane and the outer vertical plane and below the tongue, the space extending from the inner vertical plane to at least halfway to the outer vertical plane, an uppermost surface of the locking element is below the first plane, and at least a portion of the lower abutment surfaces are positioned between the outer vertical plane and the joint edge.

The references relied upon in the Official Action, either alone or in combination, fail to disclose, teach or suggest a locking system having at least the following elements: both the tongue is anglable into the groove and the locking element is insertable into the locking groove by mutual angular motion, a space extends below the tongue from the inner

vertical plane to at least halfway to the outer vertical plane, and at least a portion of the lower abutment surfaces are positioned between the outer vertical plane and the joint edge.

New claims 29 and 30 distinguish over the cited references for at least the same reason as claim 28 from which they depend.

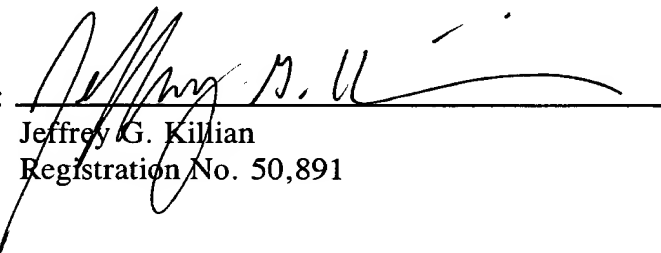
An indication of allowability of claims 25-30 is requested.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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